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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/581,443

06/02/2006

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KOBE.0094

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04/28/2009

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EXAMINER

ENG, ELIZABETH

ART UNIT

PAPER NUMBER

4151

MAIL DATE

DELIVERY MODE

04/28/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/581,443 | <b>Applicant(s)</b><br>SUGIMOTO ET AL. |  |
|                              | <b>Examiner</b><br>ELIZABETH ENG     | <b>Art Unit</b><br>4151                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/2/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/12/2008; 10/23/2007; 6/2/2006</u> . | 6) <input type="checkbox"/> Other: ____.  |

### **Detailed Action**

#### **Claim Objections**

1. Claims 3 and 5 are objected to because of the following informalities: Regarding claim 3, --5 x 10<sup>5</sup> to 4 x 10<sup>9</sup>-- should be corrected to --5 x 10<sup>5</sup> to 4 x 10<sup>9</sup>—. Regarding claim 5, --5 x 10<sup>6</sup> to 2 x 10<sup>9</sup>-- should be corrected to --5 x 10<sup>6</sup> to 2 x 10<sup>9</sup>—. Appropriate correction is required.

#### **35 U.S.C. 103 Rejection**

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. (US Pat. No. 6,184,294).

6. Regarding claim 1, Park et al. teaches a damping material [column 2, line 59] comprising:

at least one type of polymeric material [interpolymer and  $\alpha$ -olefin polymer, abstract],

the loss factor  $\tan \delta I$  of a first polymeric material [Interpolymer (I), 9.98, column 25, Table 8] is larger than a loss factor  $\tan \delta M$  of a second polymeric material [Olefinic Polymer K, 3.06, column 25, Table 8],

and a ratio of the elastic modulus of the first polymeric material to the elastic modulus of the second polymeric material 0.585 [703.3/1203.2, column 25, Table 8], wherein the value is in the claimed range of 0.1 and 2.

7. Park et al. does not teach the polymeric material has a sea-island structure. However, Park blends two immiscible polymers together [Interpolymer (I) comprising styrene, is blended with Olefinic Polymer K, column 25, Table 8], which would result in a

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sea-island structure. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a sea-island structure as claimed as the two immiscible polymers together are deemed to yield such a structure. Furthermore, the presence of additional gas bubbles from the blowing agent [column 10, lines 26 - 36] results in a sea-island structure. Thus, it would have been further obvious that the composition taught by Park et al. has a sea-island structure. Note that the island phase from hereon is considered to be Interpolymer (I), while the sea phase is considered to be Olefinic Polymer K.

8. Regarding claim 2, Park et al. teaches the gas bubbles are present in the polymeric material constituting the sea phase, wherein ethylenic polymer material is heated and incorporated with a blowing agent [column 10, lines 26 - 36], such as nitrogen or argon [column 11, line 61].

9. Regarding claim 3, Park et al. teaches a tensile modulus  $\mu$ l of the polymeric material constituting the island phase equivalent to 703.3MPa [column 25, Table 8], equivalent to  $7.033 \times 10^8$ Pa, wherein the value reads in the claimed range of  $5 \times 10^5$  to  $4 \times 10^9$  Pa.

10. Regarding claims 3 and 5, Park et al. does not teach shear modulus, or modulus of rigidity, but tensile modulus. However, tensile modulus is interpreted as equivalent to shear modulus because the tensile modulus measures the rigidity of a material as it is stretched by an apparatus such as INSTRON™ [column 15, line 46], as well as its tensile properties. Furthermore, both tensile modulus and shear modulus measure the ratio of stress to elastic tension. Thus, the composition of Park et al. will also have the

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properties of the instant invention since the properties required by the claim are proportional to each other.

11. Regarding claim 4, Park et al. teaches the loss factor  $\tan \delta$  of the polymeric material constituting the island phase is 9.98 [column 25, Table 8], wherein the value is within the claimed range of 0.1 to 10.

12. Regarding claim 5, Park et al. teaches the damping material according to claim 1, wherein a shear modulus  $\mu$ M of the polymeric material constituting the sea phase is 1203.2 MPa [column 25, Table 8], equivalent to  $1.2032 \times 10^9$  Pa, wherein the value reads in the range of  $5 \times 10^6$  to  $2 \times 10^9$  Pa.

13. Regarding claim 6, Park et al. teaches two types of polymeric material are contained [Interpolymer (I) and Olefinic Polymer K, column 25, table 8].

14. Regarding claim 7, Park et al. teaches the damping material according to claim 1, wherein one type of polymeric material is contained and the polymeric material is a graft copolymer [column 5, line 51] or a block copolymer [interpolymer, column 3, lines 19-26].

15. Regarding claim 8, Park et al. teaches a damping metal sheet comprising a damping structure in which the damping material according to claim 1 is bonded on a metal sheet [steel bar, column 33, lines 31-34].

### **Conclusion**

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Eng whose telephone number is (571) 270-

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7743. The examiner can normally be reached on Mon-Thurs from 9:00 am 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Angela Ortiz can be reached at (571) 272-1206. The fax phone number for the organization where this application or proceeding is assigned is (571) 270-8743. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

E.E.

*/Angela Ortiz/*

***Supervisory Patent Examiner, Art Unit 4151***